

ABSTRACT

An apparatus is provided for attenuating shock and vibration energy levels within a spacecraft interface isolation system. The apparatus includes one or more spring plate assemblies fitted with mechanical stops and damping devices. The isolation system is typically incorporated into an interface unit, which is connected between the launch vehicle and the payload, in order to reduce the shock and vibration load energy imposed on the payload during the fairing separation processes. The mechanical stops maintain a desired level of stiffness for the payload supporting structure during lift-off and Max q, and the damping devices reduce the spring plate oscillation tendency during fairing separation. The combination of spring plate, stop, and damping device provides a significant reduction in shock and vibration energy levels in the approximate frequency range of 100 to 300Hz.